Mentor Graphics,

My name is John Zeller, I am the Team Lead for the Oregon State University Mars Rover Team. I am writing this letter to request sponsorship from Mentor Graphics in the amount of $5000, to help us build our 2012 Mars Rover. I will first describe our third place finish this year, followed by a description of what we plan to/have started doing this year, and lastly, how we will promote the Mentor Graphics name.

Our team competes every year in the University Rover Challenge, sponsored by the Mars Society. This ~~international~~ competition usually consists of about 10 teams from around the world, competing in a number of missions; most commonly Soil Sample/Analysis, Site Survey, Astronaut Rescue/Package Delivery, and Control Panel Servicing. This year will be our fifth year competing in the annual competition, held in June in the desert of Southern Utah. We have placed first twice, in 2008 and 2010 and third last year in 2011.

Our team placed third for a variety of reasons. Foremost, aside from operating the rover effectively and completing every task, our Mars Rover stood out from much of the rest of the competition because of the advanced level of engineering that went into the design and construction of this robotic system. Designing and building a Mars Rover is a very complex undertaking, and because of this our team is highly multi-disciplinary in nature. Oregon State University was the only team to feature a robotic arm with an astonishing 6-degrees of freedom, a 4-bar linkage rocker-rocker bogie suspension system, high density bulkhead connectors, complete wiring harnesses, (custom designed using Mentor Graphics PADS design software), cooling fans in the electronics bay, full independent direct drive and the most all-terrain, all-weather capable design ever brought to this competition (see attached pictures of our 2011 Mars Rover). More about our design, including additional pictures can be found in the 2011 Mars Rover Final Design Report that I have attached to this letter.

For the 2012 Mars Rover, we will improve upon the existing design by reducing overall weight, increasing system reliability, improve the all-terrain capabilities beyond those demonstrated in previous years, and simplify the design of both the chassis and robotic arm to deliver a more applicable strategic focus to this year’s competition goals. The chassis this year will feature a 6-wheel drive system with individual steering for each wheel, drastically increasing our capabilities as an all-terrain robotic vehicle, while preserving precise controls. We will focus on the user interface by implementing several point of references with pinhole cameras placed on the chassis and the robotic arm, moving from a video transmission system capable of one channel at a time to one capable of transmitting 4 channels of video simultaneously. We will design and fabricate custom multilayer PCB’s once again for all of our motor controllers, DC-DC converters, and primary rover control board using Mentor Graphics’ PADS circuit board design software (see attached pictures). Since all design work is done by students, and nobody is paid, any funds donated would be used directly to order parts for our 2012 Mars Rover.

As we have done in previous years, the Mentor Graphics logo and name will be referenced everywhere that the Mars Rover has a presence. We will use large logos on the body of the Mars Rover itself, we have a 12 foot long, 3 foot wide banner which includes a very large Mentor Graphics logo, and we also include logos and mentions of Mentor Graphics on our webpage, design reports and community news letters. We attend various events throughout the year, which are highly publicized and create a lot of exposure for our sponsors. Examples of past events include, but are not limited to:

* Evergreen Air and Space Museum Robotics Expo (McMinnville, OR)
* Google Robotics Expo (The Dalles, OR)
* NASA Jet Propulsion Laboratory (Pasadena, CA)
* Portland City Square Beaver Days Events (Portland, OR)
* Public Testing of Mars Rover inviting community and media (Corvallis, OR)
* Several University Events (OSU Campus)

We are also very willing to visit the Mentor Graphics campus to demonstrate both our 2011 and 2012 Mars Rovers and give our warmest thanks for your continued support.

As I stated before, the Oregon State University 2012 Mars Rover Team can offer a large amount of publicity for Mentor Graphics, the primary audience of which is primarily technically minded people. We will provide regular progress reports, invite representative from Mentor Graphics to all of our public events, and come visit the Mentor Graphics campus ourselves with our 2011 and 2012 Mars Rovers to demonstrate our work that was made possible by your generous sponsorship.

Please consider my offer for Mentor Graphics to sponsor the 2012 Oregon State University Mars Rover team in the amount of $5000.

Sincerely,

John Zeller

Undergraduate Student – Computer Science

Team Lead – 2012 Oregon State University Mars Rover

(503) 896-4679